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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,513	03/01/2002	Charles A. Butterfield JR.	HES 2000-IP-000648U1	4078

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EXAMINER

GAY, JENNIFER HAWKINS

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 07/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/087,513

Applicant(s)

BUTTERFIELD, CHARLES A.

Examiner

Jennifer H Gay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 36-40 is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-35 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: U21a, 112, and 168. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: U18, U18a, U20, and U21. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4, and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Bradley (US 4,809,776).

Regarding claim 1: Bradley discloses a wellbore tool for sealing areas within a wellbore tubular. The tool includes the following features:

- A first axially extending plug (232) axially movable within the wellbore tubular for isolating a first and second area in the well.
- A first outer seal (248) on the first plug for providing a sliding, sealing engagement with the wellbore tubular.

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- An axially extending mandrel (202) extending through the first plug and including a flow passage (see Figure 2C).
- A first port (220) extending from the flow passage to the first area in the wellbore.
- A first movable closure member (210) movable between an open and closed position where in the open position the port is open and in the closed position the port is closed.
- A first closure mechanism (256) for moving the first closure member between the open and closed positions.
- A first release mechanism (204 and 230) that is responsive to the movement of the first closure mechanism to permit the first plug to be axially displaced free of the mandrel (see Figure 6).

Regarding claim 4: As recited in column 6, lines 35-60, the has a body made of plastic surrounded by a jacket of elastomeric material.

Regarding claims 8 and 9: The first closure mechanism includes a first closure device, i.e. ball 256, that seals the mandrel flow passage to seal the first area from the second thus creating a pressure differential to move the release mechanism.

Regarding claim 10: Bradley also teaches the use of a dart (264, see Figure 7A) as a closure mechanism.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 3, 11, 12, and 15-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bradley (US 4,809,776) in view of Callihan et al. (US 4,436,151).

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Regarding claims 2 and 3: Bradley et al. discloses all of the limitations of the above claims except for a first one-way check valve for sealing a central opening through the first plug when the plug and seal are displaced from the mandrel. In Figure 3B, Callihan et al. teaches a one-way check valve (53) for sealing the central opening of a plug when the plug, and its seal, are displaced down the wellbore tubular. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have included the one-way check valve of Callihan et al. on the first plug of Bradley in order to have allowed the plug to be displaced down the wellbore without fluids located below the plug being displaced up through the plug.

Regarding claims 11, 12, and 21: Bradley discloses a wellbore tool for sealing areas within a wellbore tubular. The tool includes the following features:

- A running tool (see Figure 1) including a axially extending mandrel (82) with a central flow passage.
- A first wiper plug (232) axially movable within the wellbore tubular and carried by the mandrel. The first plug includes a first outer seal (248) for providing a sliding, sealing engagement with the wellbore tubular.
- A first release mechanism (230) that is responsive to the movement of a first closure mechanism (256) to permit the first plug to be axially displace free of the mandrel (see Figure 6).
- A second wiper plug (150) axially movable within the tubular and carried by the mandrel. The second plug includes a second outer seal (168) for providing a sliding, sealing engagement with the tubular.
- A second release mechanism (140) that is responsive to the movement of a second closure mechanism (264) to permit the first plug to be axially displaced and released from the mandrel.

Bradley et al. discloses all of the limitations of the above claims except for a first one-way check valve for sealing a central opening through the plugs when the plugs and seals are displaced from the mandrel. In Figure 3B, Callihan et al. teaches a one-way check valve (53) for sealing the central opening of a plug when the plug, and its seal, are displaced down the wellbore tubular. It would have been considered obvious to one of ordinary skill in the art, at the time the

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invention was made, to have included the one-way check valve of Callihan et al. on the plugs of Bradley in order to have allowed the plug to be displaced down the wellbore without fluids located below the plug being displaced up through the plug.

Regarding claims 15, 26, and 33: The one-way check valve of Callihan et al. is a flapper valve.

Regarding claims 16, 17, 27, 29, and 32: The flapper valve of Callihan et al. would include a seal on the valve seat as well as a seal on the flapper in order to have formed a fluid tight seal thus preventing fluid flow therethrough. Further, when the flapper valve was in its closed position, the seals would be protected from the wellbore environment.

Regarding claims 18, 20, 28, and 29: The release mechanism of Bradley includes a movable sleeve (210) and a shear screw (230).

Regarding claims 19, 20, and 29: The release mechanisms and the closure mechanisms cooperate to form a pressure differential across the plugs thus providing the force necessary to move the plugs down the wellbore.

Regarding claims 20, 24, and 29: The closure mechanisms of Bradley are either a ball or a dart.

Regarding claim 22: As seen in Figure 6, the first plug further includes a flow passage reopening device (204).

Regarding claims 23 and 34: As recited in column 6, lines 35-60, the has a body made of plastic surrounded by a jacket of elastomeric material.

Regarding claim 25: The closure mechanism of the first plug passes through the second plug without effecting it.

Regarding claim 30: Bradley discloses a method for releasing the above plugs in wellbore casing for cementing. The method involves the followings steps:

- Locking to plugs to the mandrel of the running tool.
- Positioning the tool and plugs in the wellbore casing.
- Flowing fluid through the mandrel and the plugs into the casing below the running tool.
- Inserting the first closure mechanism into the mandrel and engaging it with the movable sleeve (210) of the release mechanism

- Applying fluid pressure to the closure mechanism to release the first plug from the mandrel and displace the plug into the casing.

Bradley discloses all of the limitations of the above claims except for opening a flow passage from the mandrel to the casing upon the application of fluid pressure on the closure mechanism. As seen in Figure 4A, Callihan et al. teaches inserting a release actuator (62) into a valve of a wiper plug assembly. The application of fluid pressure to the actuator causes a flow passage (21) to open. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have used the closure mechanism of Bradley to open a flow passage from the mandrel to the casing as taught by Callihan et al. in order to have been able to apply cement to the area above the plug.

Regarding claim 31: Bradley et al. discloses all of the limitations of the above claims except for a first one-way check valve for sealing a central opening through the first plug when the plug and seal are displaced from the mandrel. In Figure 3B, Callihan et al. teaches a one-way check valve (53) for sealing the central opening of a plug when the plug, and its seal, are displaced down the wellbore tubular. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have included the one-way check valve of Callihan et al. on the first plug of Bradley in order to have allowed the plug to be displaced down the wellbore without fluids located below the plug being displaced up through the plug.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bradley (US 4,809,776) in view of McMullin (US 4,624,312).

Bradley discloses all of the limitations of the above claims except for retrieving the mandrel once the plug has been displaced. In column 7, lines 9-11, McMullin teaches the removal of the mandrel of an upper plug after the plug has been displaced. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have retrieved the mandrel of Bradley as taught by McMullin in order to have reduced the material that must be drilled out once the cementing operation was completed.

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8. Claims 13, 14, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bradley (US 4,809,776) in view of Callihan et al. (US 4,436,151) as applied to claim 11 above, and further in view of McMullin (US 4,624,312).

Bradley and Callihan et al. disclose all of the limitations of the above claims except for retrieving the mandrel once the plug has been displaced. In column 7, lines 9-11, McMullin teaches the removal of the mandrel of an upper plug after the plug has been displaced. It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have retrieved the mandrel of Bradley in view of Callihan et al. as taught by McMullin in order to have reduced the material that must be drilled out once the cementing operation was completed.

Allowable Subject Matter

9. Claims 36-40 are allowed.

10. Claims 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The remaining references made of record disclose various wellbore wiper plugs.

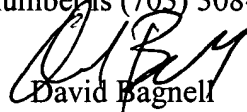
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (703) 308-2881. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone numbers for the

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organization where this application or proceeding is assigned are (703) 872-9326 for regular communications and (703) 872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1113.



David Bagnell
Supervisory Patent Examiner
Art Unit 3672

JHG



July 16, 2003